CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Order No. 83-11

NPDES NO. CA0038652

WASTE DISCHARGE REQUIREMENTS FOR:

VALLEJO SANITATION AND FLOOD CONTROL DISTRICT,
SLUDGE APPLICATION TO LAND,
TUBBS ISLAND, SONOMA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter Board) finds that:

1. Vallejo Sanitation and Flood Control District, hereinafter called the discharger, by application dated March 16, 1983, has applied for waste dicharge requirements and a permit to dispose sewage sludge under the National Pollutant Discharge Elimination System.

2. The discharger operates a secondary sewage treatment plant at Vallejo, with effluent discharge to Carquinez Strait. Sludge generated in sewage treatment is stabilized by the addition of lime, and is dewatered to produce a lime sludge cake having a solids concentration of about thirty percent. At present flow the sludge quantity amounts to about 36,500 wet tons per year. The discharger proposes to apply the sludge to agricultural lands located in southern Sonoma County. The discharger recently acquired approximately 1750 acres of farm land located on a diked historic marshland known as Tubbs Island. The agricultural land lies south of Highway 37 and approximately 12 miles west of the dischargers treatment facility, as shown on Attachment A which is incorporated herein and made a part of this Order. The discharger reports that approximately 1500 acres are suitable for sewage sludge application.

3. Tubbs Island is bordered by Sonoma Creek on the east, Tolay Creek on the west and San Pablo Bay on the south. The Reyes series of soils are predominant in Tubbs Island and consist of silty clay loam with a small amount of organic matter. The soil is strongly acid and saline. Underlying water tables are of poor brackish quality which have been lowered to a depth of four to five feet by a system of open ditches from which water is pumped to Sonoma Creek and Tolay Creek. The water table rises to within a few inches of the surface during wet weather months.

4. Dewatered lime sludge cake from the discharger's treatment plant will be transported by truck to Tubbs Island on a year round basis. During the winter growing season (November 1 through May 30th) the sludge will be stockpiled in a bermed cotainment area. During the dry season (June 1 through October 31) sludge generated from the treatment plant as well as that previously stockpiled will be spread on selected portions of the site and disced into the upper layer of soil. The discharger has submitted a management plan which describes in detail

the method and quantity of sludge application, the crops to be grown, and an assessment of the heavy metal concentrations in sludge, soils, and crops. Sludge hauling and application will be done by District personnel, but all agricultural operations will be done under lease to a local farmer.

5. On June 6, 1979 administrative authorization was given to Mr. Donald Westerbeke of Sears Point Farming Company (former owner of the site) for the disposal of lime sludge from the discharger on a 300 acre portion of the Tubbs Island. Sonoma County Health Department issued a Solid Waste Facility permit for the use of up to 400 acres of the site on June 8, 1979. Disposal of the dischargers lime sludge has continued on the 300 acres since 1979 under the terms of those authorizations.

6. Section 405 of the Federal Clean Water Act provides that whenever the disposal of sludge from a publicly owned treatment works would result in any pollutant from such sludge entering waters of the United States, such disposal shall be regulated in accordance with a permit under the National Pollutant Discharge Elimination System (NPDES). Drainage pumped from the proposed sludge disposal site as described in Finding 3 above would contain pollutants from sludge applied by the District, and said drainage would enter Sonoma Creek and Tolay Creek, waters of the United States.

7. On September 13, 1979, U. S. Environmental Protection Agency (EPA), under authority of the Resources Conservation and Recovery Act of 1976 (PL94-58) and Section 405 of the Federal Clean Water Act issued an interim final regulations (40 CFR 257) related to sludge disposal practices of publicly owned wastewater treatment plants; "Criteria for Classifications of Solid Waste Disposal Facilities and Practices". The regulations include guidelines for sludge application to land used for the production of Food-chain Crops with limits on the amount of Cadmium and Polychlorinated biphenyls (PCB) that can be added to the soil. The limitations contained in this order are consistent with the federal regulations cited above.

8. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for Sonoma Creek, Tolay Creek and San Pablo Bay.

9. The beneficial uses of San Pablo Bay, Sonoma Creek and Tolay Creek in the vicinity of the discharge as contained in the Basin Plan are:

   a. Fish migration
   b. Fish spawning
   c. Wildlife habitat
   d. Preservation of rare and endangered species
   e. Cold freshwater habitat for fish
   f. Warm freshwater habitat for fish
   g. Navigation
   h. Water contact recreation
   i. Non-contact water recreation
   j. Industrial water supply
   k. Esthetic enjoyment

10. The discharger has completed a final Environmental Impact Report entitled "Sludge Management Report" dated June, 1981, in accordance with the California Environmental Quality Act (Public Resource Code Section 2100, et. seq.).

11. The project as approved by the discharger will have the following potential effects on the environment as described in the Environmental Impact Report:

    a. Waters that might be affected by the agricultural project include groundwaters underlying irrigated fields, surface waters in the ditches that receive drainage from the fields, and surface water bodies to which waters in the ditches are pumped. Pollutants that could enter these waters through leaching and surface water runoff include Nitrogen (nitrate and ammonia), Phosphorus, and heavy metals such as Cadmium and Zinc.

    b. Potential negative impacts to the vegetation and wildlife of the agricultural and neighboring salt marsh habitats.

    c. Potential entry of heavy metals and other trace elements into the food chain with possible toxic effects to aquatic and terrestrial wildlife.

    d. Possible introduction of pathogens or parasites that could infect fish and wildlife and the long-term introduction of toxic ammonia compounds and excess nitrogen and phosphorous into the wetlands adjacent to the site and to the bay system in general.

    e. Hazards may arise to farm operators due to direct contact with pathogens contained in the sludge.

12. The Board finds that the potential adverse impacts on beneficial uses stemming from the discharger's project as described in Finding 11 have been mitigated by measures incorporated into the project design or required by this Order.

13. This Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written comments and recommendations.

14. The Board in a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to provisions of the California Water Code, the Federal Water Pollution Control Act as amended, the Federal Resources Conservation and Recovery Act, and to regulations adopted thereunder, that the discharger shall comply with the following:

A. PROHIBITIONS

1. Waste disposed of at the site shall be limited to dewatered stabilized lime sludge generated by the discharger, unless prior written authorization is obtained from the Executive Officer. This authorization will be based upon submittal of technical data satisfactory to the Executive Officer, demonstrating compliance with all requirements of this Order.

2. No waste that contains contaminants defined as hazardous waste in 40 CFR 260 - 265 shall be disposed of on the site.

3. Sludge shall not be applied to fields between November 1 and May 31.

4. Sludge shall not be applied within 100 feet of any ditch, drainage channel, or wetland.

5. Grazing animals shall not be permitted on the fields which have received sewage sludge within the preceeding 30 days.

6. Milking animals shall not be permitted on the fields which have received sewage sludge within the preceeding 12 months.

B. SEWAGE SLUDGE APPLICATION RESTRICTIONS

1. Neither the transport, handling, storage nor application of sewage shall cause a condition of pollution nor nuisance as defined by Section 13050(m) of the California Water Code.

2. The pH of the sewage sludge and soil mixture shall be 6.5 or greater at the time of incorporation, except for sludge with cadmium concentrations of 2.0 mg/kg or less.

3. The annual Cadmium (Cd) application rate shall not exceed the following limits:

Time Period	Annual Cd Application rate (kg/ha)
Present to June 30, 1984	2.0(1.78 lb/AC)
July 1, 1984 to Dec. 31, 1986	1.25(1.11 lb/AC)
Beginning January 1, 1987	0.50(0.44 lb/AC)

4. The maximum cumulative application of cadmium from sewage sludge shall not exceed the 5 kg/ha.

5. Sewage sludge containing concentrations of Polychlorinated Biphenyls (PCBs) equal to or greater than 10 mg/kg (dry weight) shall be incorporated into soil immediately when applied to land. Sludge containing PCB's in excess of 50 mg/kg are prohibited from disposal on this site.

6. The application rate of sewage sludge to each field shall be based on type of crops grown, nitrogen demand of the crops and heavy metal concentration of the sludge. This rate shall be calculated, and documentation submitted each year for Executive Officer approval prior to any land application of the sludge.

7. No sludge shall be stored outside the designated storage area as shown in the Attachment 'A'.

8. Ponded water from the sludge storage area shall not enter or be discharged to the adjacent ditches.

9. Sludge shall be spread thinly and disced into soil to minimize wind erosion of sludge to surface waters.

10. The perimeter drainage ditches and other drainage facilities shall be maintained to convey the maximum anticipated rainfall runoff from the site and to prevent inundation of the site.

11. All abandoned wells located within the disposal area shall be sealed to the satisfaction of the Sonoma County Department of Health Services and the California Department of Health Services.

12. The application of sewage sludge to land shall not cause the following conditions to exist in waters of the United States at any place.

    a. Floating, suspended, or deposited macroscopic particulate matter or foam;

    b. Bottom deposits or aquatic growths;

    c. Alteration of temperature, and turbidity beyond present natural background levels;

    d. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

13. The discharge of waste shall not cause the following limits to be exceeded in waters of the United States in any place within one foot of the water surface:

a. Dissolved oxygen	5.0 mg/l minimum. Annual median - 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.

b.	Dissolved sulfide	0.1 mg/l maximum.
c.	pH	Variation from natural ambient pH by more than 0.5 pH units.
d.	Un-ionized Ammonia as N	0.025 mg/l annual median 0.4 mg/l maximum
e.	Nutrients	50 ug/l chlorophyll *a* maximum. When background levels exceed this requirement, then this discharge shall not add further nutrients.

14. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. PROVISIONS

1. The discharger shall comply with all portions of this Order immediately upon adoption.

2. The discharger shall file with the Regional Board technical reports on self-monitoring work performed according to detailed specifications as directed by the Executive Officer. Such reports shall include a site management plan to include plans for the upcoming dry season, and an assessment of the impacts of past sludge applications. This report shall be submitted by May 15, 1983, and shall be updated by May 15 for every year thereafter.

3. The discharger shall file with this Board a report of any material change or proposed change in the character, treatment, or volume of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries, or ownership of the property.

4. The discharger shall permit the Board, the Environmental Protection Agency or its authorized representative in accordance with California Water Code Section 13267(c):

   a. Entry upon premises in which an effluent source or sludge is located or which any required records are kept;

   b. Access to copy any records required to be kept under terms and conditions of this Order;

   c. Inspection of monitoring equipment or records; and

   d. Sampling of dicharge, soil or agricultural crop.

5. These requirements do not exempt the operator of this waste disposal facility from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize this waste disposal facility, and they leave unaffected any further restraint on the disposal of wastes at this site which may be contained in other statutes or required by other agencies.

6. In accordance with Section 13263 of the Water Code, these requirements are subject to periodic review and revision by this Regional Board. The Board shall take into consideration the results of the self-monitoring program whenever these periodic reviews occur.

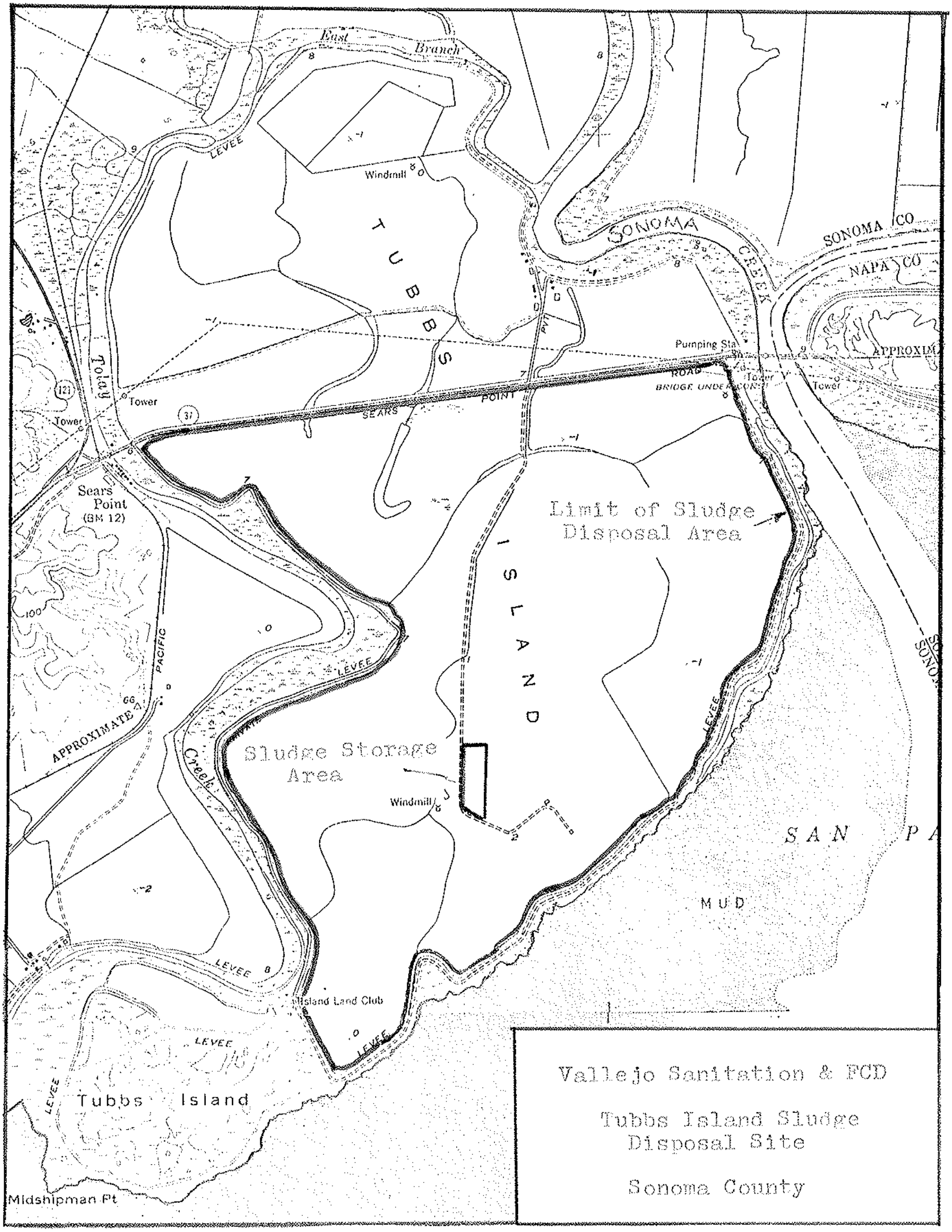
7. This Order expires April 20, 1988. The discharger must file a Report of Waste Discharge in accordance with the Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date.

8. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 20, 1983.

FRED H. DIERKER
Executive Officer

Attachments:
A. Site Map


East Branch
LEVEE
Windmill
TUBBS ISLAND
SONOMA CREEK
SONOMA CO
NAPA CO
Pumping Sta
Tower
SEARS POINT ROAD
BRIDGE UNDER CONST
Tolay Creek
Sears Point
(BM 12)
PACIFIC
APPROXIMATE
Limit of Sludge Disposal Area
Sludge Storage Area
Windmill
LEVEE
Island Land Club
Tubbs Island
Midshipman Pt
MUD
SAN PA
Vallejo Sanitation & FCD
Tubbs Island Sludge Disposal Site
Sonoma County

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

FINAL

SELF-MONITORING PROGRAM
FOR

VALLEJO SANITATION AND FLOOD CONTROL DISTRICT

LIME SLUDGE LAND APPLICATION AT TUBBS ISLAND

NPDES NO. CA 0038652

ORDER NO. 83-11

I. GENERAL

1. All analyzes shall be performed by an approved (certified laboratory using generally acceptable methods or current EPA/State guidelines procedures for sampling and analyses of sludge, soil, water and plants.

2. The sludge, soil, groundwater, drainage channel, receiving water and plants analyses shall be submitted in accordance with the specifications described in this program. Any failures to conform to this program of sampling and analyses shall be explained in the subsequent report.

II. REPORTING

Reporting to the Board shall normally be accomplished by the submission of a single annual report. This report shall be prepared by, or under the supervision of, a soil scientist, agronomist, soils engineer, or other individual having a recognized expertise on the impacts of sewage sludge on soils and on surface and groundwaters. The annual report shall be submitted no later than May 1 of each year, and shall include the following:

A. Annual Management Plan Update

This section shall describe the method of operation for the upcoming season and include the following as a minimum:

1. Fields to which sludge is to be applied and the crop to be grown.

2. Sludge loading rate to be used, expressed in dry tons per field and as kg/ha.

3. Method proposed for incorporating sludge into soil.

4. Fields for which soil sampling is planned in the coming dry weather season.

Where applicable, the management plan update should indicate changes to past practices that have been identified as being needed in the subsequent portion of the report.

B. Report on Impact of Previous Sludge Applications

The overall intent of this section is to provide a comprehensive annual assessment of the project. This section shall include data presentation and a narrative evaluation of the sludge applied to the land, and of the impacts on soils, water and crops. Where appropriate, data presentation and discussion shall be specific to individual fields. Where problems are found to exist, proposed solutions shall be included.

1. Sludge

Present data on sludge composition. All data shall be presented, and any anomolies found shall be discussed. Any significant changes from previous analyses shall be discussed.

2. Soils

For each field, the following table shall be completed based on the most recent data obtained:

Field_____ Last date sampled_____

Parameter	Prior Cumulative Loading kg/ha	Soil Concentration, mg/kg Upper 6"	6"-12"	12"-36"
Sludge added as dry solids				
Nitrogen				
Ammonium				
Organic				
Nitrate				
TKN				
Phosphorous				
Potassium				
Zinc				
Copper				
Nickel				
Cadmium				
Lead				
Chromium				
PCB's				
Boron				
pH				

The data presented above shall be evaluated and discussed. This discussion shall also include the degree to which the sludge has been incorporated into soils at various depths (copper data may be useful in this assessment), and whether the project has had any effects on soil texture or workability.

Any changes in soil pH shall be described, together with probable reasons. Special attention shall be paid to any tendency for soil pH to return to acid conditions in years following sludge application.

3. Water

Present data on water pumped to the creeks in terms of both mg/l and lbs per day. All relevant parameters shall be compared with limits contained in the District's NPDES permit, and values in excess shall be discussed. Receiving water data shall also be presented and evaluated.

4. Crops

The nature and yield of the previous year's crops shall be presented and evaluated. This discussion shall be specific to each field. Yields shall be compared with those achieved in previous years, and any significant differences found shall be evaluated. Pollutant concentrations shall be reported and evaluated for all crops sampled.

5. Accounting for Heavy Metals

An accounting shall be made in the sludge applied for each field for the fate of heavy metals. This mass balance shall be made for each field, and be based on the cumulative total sludge applied. This mass balance shall include the following possible sinks:

a. Retained in the soil

b. Lost from the site with the crop

c. Lost from the site as drainage water pumped over the dikes

d. Present in soluble form in underlying groundwater

III. SAMPLING AND ANALYSIS

A. Sludge

1. During the period in which sludge is applied to the land directly from the treatment plant, sampling and analyses shall be performed at three month intervals (twice per season) over five consecutive days as follows:

   a. Samples shall be taken from each truckload leaving the plant.

   b. Daily composites shall be analyzed for the pH, Percent Solids, Ammonia N, Nitrate, TKN, and Total N.

   c. Equal volumes of the daily composites shall be combined into a five day composite. This shall be analyzed for the following: pH, Percent Solids, Phosphate, Potassium, Zinc, Copper, Nickel, Cadmium, Lead, Chromium, PCB's and Boron.

2. The sludge storage pile shall be sampled annually immediately prior to spreading each year. The pile shall be sampled at twenty representative points. These samples shall be combined into a composite and analyzed for all the parameters specified in 1.b. and 1.c. above.

3. For the analyses given above:

   a. Except for pH, percent solids, and boron results shall be expressed as mg/kg.

   b. Boron shall be analyzed as a saturation extract, and results present expressed as mg/l.

   c. An analytical sensitivity for heavy metals of 0.1 mg/l shall be adequate (direct flame aspiration method).

B. Soils

1. Annual Testing

   a. Two diagonal transects shall be established for each field. Each year, after harvest and prior to sludge application, a minimum of five samples shall be taken along each transect, and shall be representative of the 0 to 12" depth range. Soil samples from a given field shall be composited and analyzed for the parameters specified below.

   b. Analyses

Parameter	Unit
pH	pH Unit
Acidity or Basicity	mg/kg as $CaCO_3$*
Copper	mg/kg

*the amount of acid or base, expressed as $CaCo_3$, necessary to adjust pH to 6.5.

2. Comprehensive Testing

   a. Comprehensive testing shall be done prior to the next sludge application for any given field to define conditions that prevailed prior to the commencement of this monitoring program. After this initial testing, testing shall be conducted each time that approximately 90 dry tons of sludge per acre has been applied to any given field. Under current plans, this corresponds to a testing every three application cycles, or once every nine years.

   b. For any given field to be sampled, two diagonal transects shall be established. Along each transect, and spaced equidistantly, a minimum of ten soil samples shall be taken at each depth.

      Soil samples shall be taken for three depths: zero to six inches; six to twelve inches; and twelve inches to three feet. Soil samples from each depth (twenty samples per depth per field) shall be composited and analyzed for the parameters specifiec below.

c. Analyses

Parameter	Unit
pH	pH unit
Acidity or Basicity	mg/kg as $CaCO_3$
CEC(2)	meq/100gm
Electric Conductivity	Millimhos/cm at 25°C
Texture(2)	
Ammonium-Nitrogen	mg/kg
Organic-Nitrogen	mg/kg
Nitrate-Nitrogen	mg/kg
TKN	mg/kg
Total Phosphorous	mg/kg
Total Potassium	mg/kg
Cadmium	mg/kg
Chromium	mg/kg
Copper	mg/kg
Nickel	mg/kg
Lead	mg/kg
Zinc	mg/kg
PCB(1)	mg/kg
Boron(3)	mg/l

(1) PCB shall be analyzed only when the sludge concentration exceeds 5 mg/kg.
(2) To be analyzed only once per field to obtain background information in order to determine the variability in the field.
(3) To be analyzed in saturation extract as extractable or soluble Boron.

d. Soil samples and analyses for the control field where no sludge has been applied shall be performed as described in 2.b. and 2.c. above.

C. Groundwater

1. Sampling Stations

Stations	Location
G-1	Located in Field "15N" - North of the sludge storage area.
G-2	Located in Field "9" - Northeast portion of the property.
G-3	Located in Field "16S".
G-4	Located in Field "11".
G-5	Located in Field "15S".
G-6	Located in Control Field.

The sampling wells shall be located at least 50 feet from the nearest ditch or drainage channel. The depth of these "G" wells shall be as deep as is necessary to reach the water table. Wells shall be constructed so as to exclude surface runoff.

2. Analyses

Parameter	Unit
Depth to water	ft.
pH	pH unit
Conductivity	mhos/cm at 25°C
Chloride	mg/l
Cadmium	mg/l
Chromium	mg/l
Copper	mg/l
Nickel	mg/l
Lead	mg/l
Zinc	mg/l

NOTE: Standing water in each well shall be flushed prior to taking samples.

3. All stations shall be sampled two times a year, in March and October.

D. Drainage Channels

1. Stations

D-1	Drainage discharge from pump #1 to Sonoma Creek.
D-2	Drainage discharge from pump #2 to Tolay Creek.
D-C(2)	As shown on the attached map.

2. Analyses(3)

Parameter	Unit
pH	pH unit
Conductivity	mhos/cm at 25°C
Nitrate-Nitrogen	mg/l
Ammonia-Nitrogen	mg/l
Organic-Nitrogen	mg/l
Total Phosphorous	mg/l
TKN	mg/l
Bioassay(1)	% survival
Lead	mg/l
Cadmium	mg/l
Copper	mg/l
Nickel	mg/l
Zinc	mg/l
Total Chromium	mg/l

NOTES: (1) "Bioassay" to be analyzed once a month
(2) Control Station - Composite sample shall consist of four (4) grab samples of equal quantity during 24 hr. period.
(3) All analyses shall consist of 24 hr. composite.

3. Frequency

Sampling at Stations D-1 and D-2 shall consist of a 24 hour composite which shall commence as soon as pumps are activated. If the pumps are operated for a continuous period of time then an additional composite sample shall be taken on the 5th day and again prior to shut off (if pumping continues for more than 8 days). A maximum of three samples within 30 days period shall be sampled (24 hr composite) and analyzed.

E. Bay Receiving Water

1. Station

Station	Location
R-1	At the confluence of Napa Slough and Sonoma Creek.
R-2	100 feet from the point of discharge from pump #1 located in the middle of the Sonoma Creek.
R-3	At about 500 feet downstream from the discharge point, in the middle of Sonoma Creek.

2. Analyses

Parameter	Unit
pH	pH unit
Conductivity	mhos/cm at 25°C
Organic Nitrogen	mg/l
Nitrate Nitrogen	mg/l
Ammonia Nitrogen	mg/l
Un-ionized Ammonia	mg/l
TKN	mg/l
Total Phosphorous	mg/l
Cadmium	mg/l
Chromium	mg/l
Copper	mg/l
Nickel	mg/l
Lead	mg/l
Zinc	mg/l
Temperature	°C

3. Frequency

Once a month during pumping period at slack water.

F. Crops

1. For each field to which sludge has been applied, representative samples shall be taken annually from whatever portion of the plant is removed from the property (example - leaf grain, seed or bale). If more than one crop is grown then a representative of each type shall be analyzed. Results shall be reported specifically for each field, and the method and number of samples should be described.

2. Analyses

Leaf, Hay Bale or Seed	Chromium	mg/g
	Cadmium	mg/g
	Nickel	mg/g
	Copper	mg/g
	Zinc	mg/g
	Lead	mg/l
	Yield	Tons/acre

3. Frequency

Samples shall be taken annually at the time of harvesting.

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with sludge disposal specifications established in the Board's letter dated June 6, 1979.

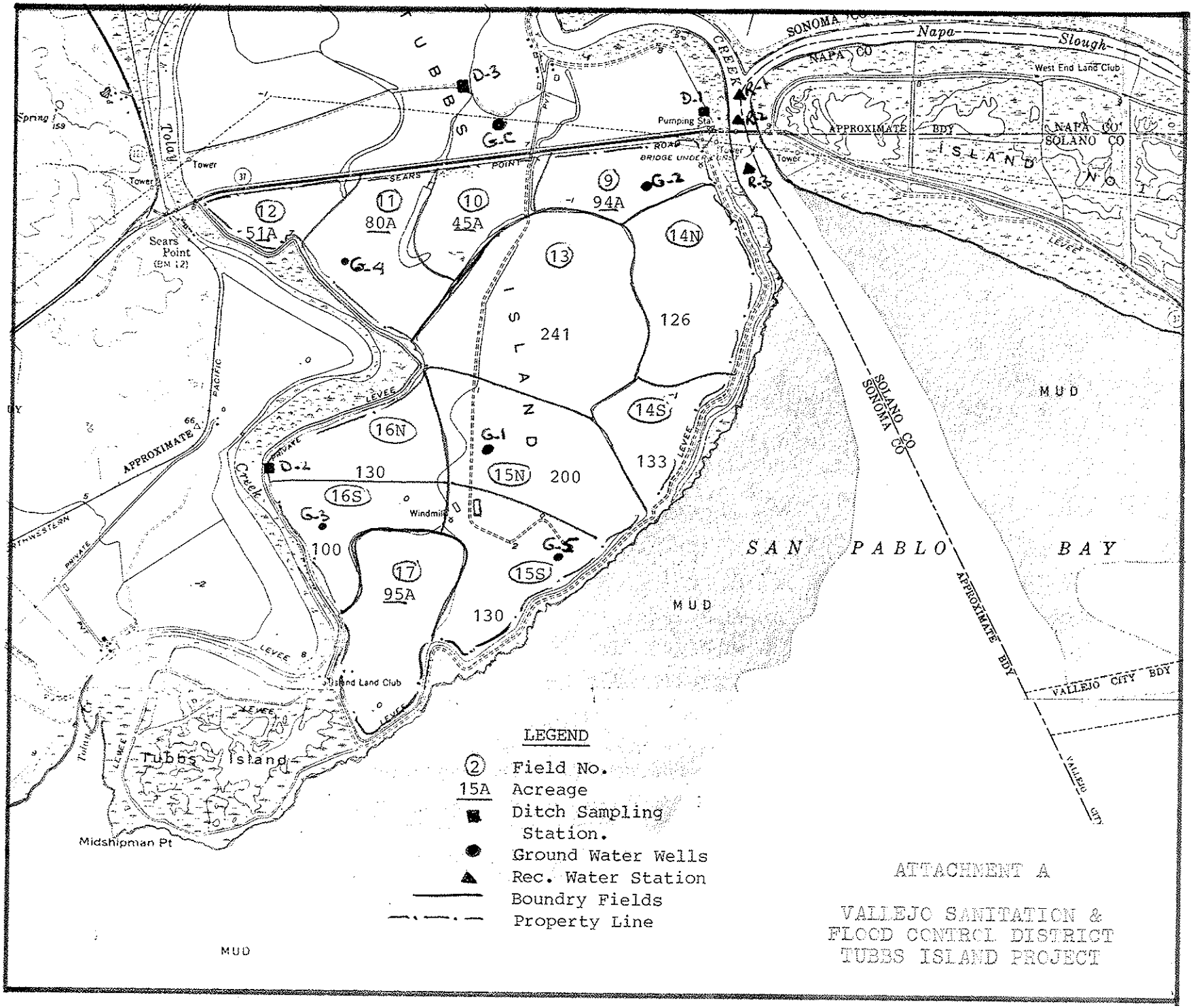
2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Effective Date April 28, 1983

Attachment:
Map of the Tubbs Island
with smapling location(s)



ATTACHMENT A

VALLEJO SANITATION & FLOOD CONTROL DISTRICT
TUBBS ISLAND PROJECT